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**VOLTAGES AND CURRENTS ON SECONDARY LINES CAUSED BY DIRECT LIGHTNING HITS ON
MEDIUM VOLTAGE LINES**

Welson Bassi Alexandre Piantini
Institute of Electrotechnics and Energy (IEE/USP)

Jorge M. Janiszewski Nelson M. Matsuo
Polytechnic School(EPUSP)

University of São Paulo (USP)

Abstract - This paper presents some results of a study upon the voltages and currents that occur on secondary lines as a consequence of direct lightning hits on MV lines. The simulations are performed with the Alternative Transients Program (ATP) and investigations are done considering different values for the distance between the transformer and the lightning striking point, stroke current amplitude and grounding resistances. Voltages and currents are calculated at various points of the secondary line and for different protection configurations regarding the location of the surge protective devices (SPDs).